

with a white marker located at one section of the capture guide is, in comparison to another white marker located at another section of the capture guide, that there is lighting discrepancy between the two points. The white marker may appear to be brighter (e.g., higher luminescence) than the other white marker. The material data collection system may make adjustments to the captured digital image to compensate for the difference. For example, the material data collection system may apply a gradient to make the captured digital image darker near the white marker and brighter near the other white marker. The material data collection system may consider any number of markers to determine adjustments need to a captured digital image. For example, if a particular capture guide includes four white markers and four black markers, the material data collection system may consider all eight markers or any subset of the markers to determine whether adjustments are necessary.

[0122] Alternate implementations may include markers with colors other than white and black to perform color correction. For example, instead of black and white, the capture guide may include a marker to calibrate a captured digital image in another color space, such as red-green-blue (RGB), ADOBE™ RGB, RYB, RYB-GCM, or any other color space or subset of a color space. This may allow the same or a similar color temperature to be applied throughout the entire image.

[0123] In an implementation, the material data collection system may include both chromaticity correction and color correction for a single sample. The material data collection system may perform the chromaticity correction, before the color correction.

[0124] Returning to FIG. 8B, in a step 836, the material data collection system may select a crop region for repeat and preview. The application can automatically select a cropped region for the repeat, and the user can manually adjust the region as needed. This allows seamless stitching of the crop region when applied to a geometry. The material data collection system may modify the crop region to prepare the cropped region for application on a geometry. For example, the material data collection system may apply an edge blurring algorithm. In addition to performing alignment corrections when applying on a geometry, the material data collection system modifies edges so that possible edge artifacts are suppressed. That way, when a pattern from the cropped region is repeated, a stitching algorithm may stitch the pattern and reconcile how edges of the pattern should properly look when put together.

[0125] In an implementation, the material data collection system may include an edge detection algorithm that identifies where an instance of a pattern may be found in a captured digital image. Alternate implementations of the material data collection system may include user identification of where an instance of a pattern is found.

[0126] In a step 838, the material data collection system may adjust the edges of the cropped region to blend edges of the repeated crop region. Each crop region may include at least one complete instance of a pattern of the sample material. FIG. 17 shows a sample screen capture of a crop verification preview. This may allow a user to verify whether the cropped version of a sample material was correctly done or needs to be adjusted. If the user determines the cropped version does not accurately reflect the material, the user may retry and create a new cropped region. The crop verification preview may be displayed to a user, so that the user may

confirm that the cropped version appears accurately when the cropped version is duplicated. In the example shown on FIG. 17, nine cropped areas 1702 are shown. Each cropped area may show the same cropped area. The cropped area may include patterns or designs, such as circles 1704, 1706, 1708, and 1710. As shown in FIG. 17, a user may view the repeated crop area and confirm that the cropped area was correctly identified, since the circles 1704, 1706, 1708, and 1710 correctly line up across multiple repeated cropped areas.

[0127] In a step 840, the material data collection system saves with the material data an uncropped version of the digital image. This may include the digital image showing the capture guide. The capture guide may include alignment indicators, labels, and measurement scales to assist a user that retrieves the material data in understanding the attributes of the material.

[0128] In a step 842, the material data collection system may save a cropped version or swatch of the digital image of the material. For example, the material shown in the digital image as shown in the cut-out portion of the capture guide may be stored separately, to provide a cleaner view of the material without the capture guide.

[0129] In a step 844, the material data collection system allows saving the digital image and associated metadata. In addition to the metadata described elsewhere in this application, relevant metadata may include a scale of the digital image, camera settings used when the digital image was captured (e.g., f/stop, whether flash was on, location information, brightness adjustments, ISO levels).

[0130] In a step 846, the material data collection system applies the cropped version of the sample material. For example, the cropped version of the sample material may correspond to a swatch sample of the fabric captured in the digital image. The swatch sample may be repeated horizontally or vertically as many times as needed to create a virtual fabric of desired size as it would appear on a geometry. The virtual fabric should look continuous, instead of a checkerboard effect where it is apparent that the virtual fabric is generated using stitched together sample swatches. Eventually the swatch sample can be applied to create images of clothing worn by people (e.g., showing how the fabric drapes, how the fabric would appear in different lighting).

[0131] The material data collection system may include various geometries, such as human forms, to apply the cropped version. The geometries may be used to model the sample material. The geometries may include different regions for different clothing items, such as a shirt region, a pants region, a dress region, or other regions. The cropped version is adjusted to conform to the contours of the geometry. The cropped version may be applied to one or more regions of the geometries and repeated one or more times, so that it appears as if the model is dressed in the sample material. In an implementation, the geometries are placed in a virtual reality background, such as using a mock background or an augmented reality background, so that a user may properly appreciate the model in a real-life space.

[0132] In an implementation, a swatch or cropped version of the sample material may indicate how to combine two or more instances of the swatch. Multiple instances of the swatch may be stitched together depending on dimensions of a geometry the swatch is being applied on. Larger geometries may require more instances of a swatch than for smaller geometries. For example, a first edge of a swatch